

THE TAXONOMY OF THE *PELARGONIUM PELTATUM* (L.) L'HÉRIT. COMPLEX

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ABSTRACT

The taxonomy of *Pelargonium peltatum* and all the other taxa which have been included in the section *Dibrachya* of the genus *Pelargonium* at some time or other, has been revised. It is concluded that only one species is involved, viz. *Pelargonium peltatum*.

UITTREKSEL

DIE TAKSONOMIE VAN DIE *PELARGONIUM PELTATUM* (L.) L'HÉRIT. KOMPLEKS

Die taksonomie van *Pelargonium peltatum* en al die ander taksons wat op een of ander tydstop ingesluit was in die seksie *Dibrachya* van die genus *Pelargonium*, is hersien. Daar is tot die slotsom gekom dat slegs een spesie ter sprake is, nl. *Pelargonium peltatum*.

Key words: *Pelargonium peltatum* complex, taxonomy.

INTRODUCTION

Geranium peltatum was one of twenty species of *Geranium* described by Linnaeus in his *Species Plantarum* (1753). The name was based on plants grown in Clifford's garden. In 1789 L'Héritier transferred this species to his new genus *Pelargonium*. In the same publication, Aiton's *Hortus Kewensis* ed. 1, L'Héritier described *P. lateripes*, which was illustrated in his *Geranologia*, t. 24 (1792).

Salisbury published a new name, *P. hederacfolium*, for *P. lateripes* in 1796. The year 1805 saw the publication of the first volume of Andrews' *Geraniums* in which he described the var. *variegatum* of *P. peltatum*, and *Geranium hederinum* with the varieties *flore albo* and *variegatum*. In the sec-

ond volume, published in 1806, he described *Pelargonium peltatum* var. *superbum* and *Geranium hederinum* var. *zonales*; all of garden origin.

The first volume of Sweet's *Geraniaceae*, published in 1821, contains the description of *Pelargonium scutatum* and *P. pinquifolium*. Sweet expressed some doubt as to whether *P. pinquifolium* may possibly have been of hybrid origin. In 1824 De Candolle published the first volume of his *Prodromus*, with descriptions of *P. lateripes* var. *albomarginatum* and var. *walneri*, as well as *P. peltatum* var. *zonatum*. Also in 1824, Hoffmannsegg published in his *Verzeichniss der Pflanzenkultur*, the name *P. glabrum*.

In 1826 Sweet published his *Hortus Britannicus*, which included descriptions of three varieties of *P. lateripes* cultivated in British gardens, viz. vars. *roseum*, *viridifolium* and *zonation*. Ecklon & Zeyher, in *Enumeratio Plantarum* vol. 1 (1835), used a new generic name, *Dibrachya*. This genus was based on Sweet's (1805) section *Dibrachya*, which was published with a short description but no reference to any species. Ecklon & Zeyher included three species in this genus, viz. *Dibrachya peltata* (based on *Geranium peltatum* L.), *D. scutata* (based on *P. scutatum* Sweet), and *D. clypeata*, based on their own collection. In 1841 Steudel transferred *D. clypeata* to the genus *Pelargonium* in his *Nomenclator Botanicus*.

The first comprehensive account of the natural South African species of *Pelargonium*, by Harvey in volume 1 of Harvey & Sonder's *Flora Capensis*, appeared in 1860. This work contains descriptions of one new variety (*P. peltatum* var. *glabrum*), and two new combinations, *P. peltatum* var. *scutatum* (based on *P. scutatum* Sweet) and *P. peltatum* var. *clypeatum* (based on *Dibrachya clypeata* Eckl. & Zeyh.).

In 1880 Saint-Lager published a new name for *P. lateripes*, namely *P. lateripedatum*. In 1890 Robert Brown described *P. saxifragoides* from a live plant grown in the Kew Gardens. Kuntze transferred *Geranium peltatum* L. to his new genus, *Geraniospermum*, in 1891.

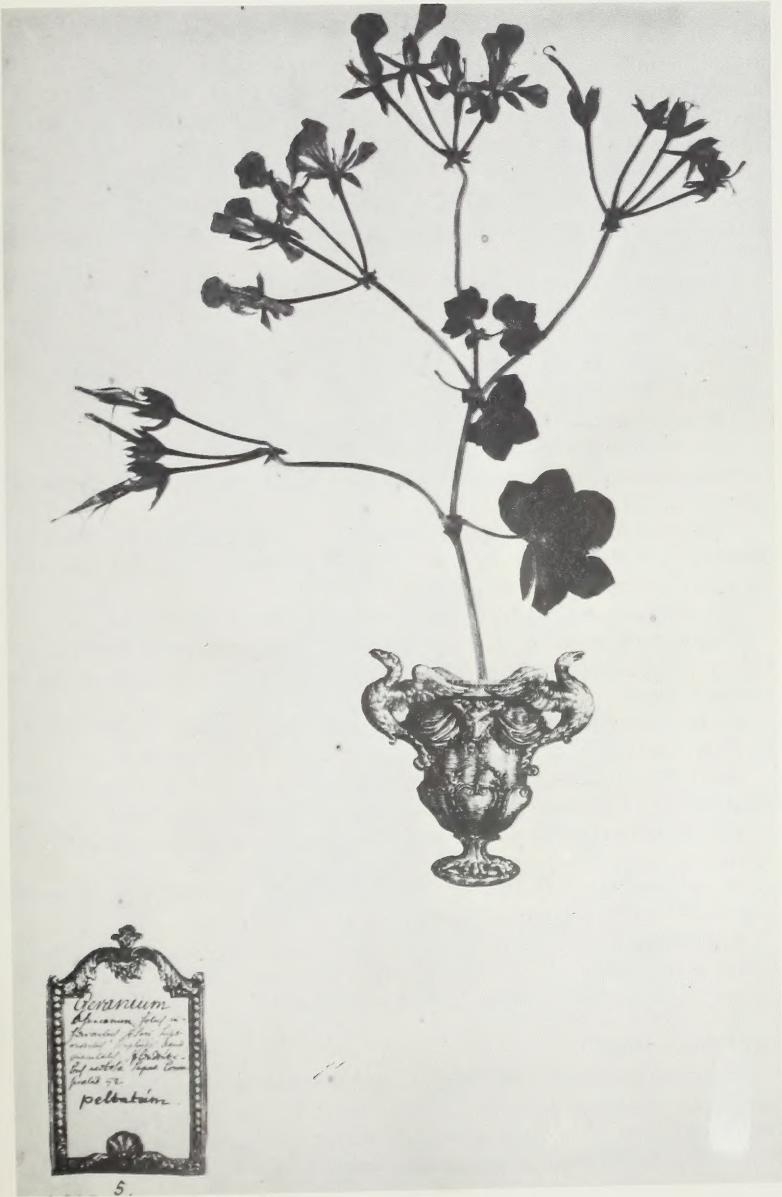
The second comprehensive treatment of the natural species of *Pelargonium*, and the last to date, was Knuth's treatment in *Das Pflanzenreich*, which appeared in 1912. He described yet another species, *P. bachmannii*, from material collected by Bachmann in Pondoland.

The aim of this present investigation was to subject this long list of taxa to a critical taxonomic examination to determine their individual or collective status.

***Pelargonium peltatum* (L.) L'Hérit.** in Ait., Hort. Kew. ed. 1, 2: 427 (1789); Salisb., Prodr.: 315 (1796); Willd., Sp. Pl. 3, 1: 669 (1800); Dietrich,

FIG. 1.

Lectotype specimen of *Pelargonium peltatum* in Hort. Cliff. 345.14 (BM).
(Photo J. J. A. van der Walt).



Lex. Gärt. Bot. 7: 47 (1807); Pers., Syn. Pl. 2: 231 (1807); Haw., Syn. Pl. Succ.: 307 (1812); DC., Prodr. 1: 666 (1824); G. Don, Gen. Syst. 1: 738 (1831); Steud., Nom. Bot. ed. 2, 2: 288 (1841); Harv. in Fl. Cap. 1: 293 (1860); Knuth in Pflanzenr. 4, 129: 422 (1912); Marloth, Fl. S. Afr. 2: 87, t. 31 (1925); Batten & Bokelmann, Wild. Flow. E. Cape Prov.: 87, t. 73, fig. 5 (1966); Gledhill, E. Cape Veld Flow.: 141, t. 33, fig. 5 (1971); Clifford, Pelargoniums, ed. 2: 225 (1970); J. J. A. v.d. Walt, Pelarg. S. Afr. 1: 33, t. 33 (1977). Type: sine loc. et. leg. in Herb. Hortus Siccus Clifortianus (BM, lecto.!) (Fig. 1).

Geranium peltatum L., Sp. Pl. ed. 1, 2: 678 (1753); ed. 2, 2: 947 (1763); Burm. f., Geran.: 38 (1759); L., Syst. Veg. ed. 14: 613 (1784); Cav., Diss. 4: 232, t. 100, fig. 1 (1787); Curtis in Curtis's bot. Mag. 1: t. 20 (1787); Thunb., Prodr. 1: 113 (1794); Andr., Geran. 1: t. 44 (1805); Thunb., Fl. Cap. ed. 2: 513 (1823).

Dibrachya peltata (L.) Eckl. & Zeyh., Enum. 1: 74 (1835).

Geranospermum peltatum (L.) Kuntze, Rev. Gen. 1: 94 (1891).

Pelargonium lateripes auct. mult., non L'Hérit. in Ait., Hort. Kew. ed. 1, 2: 428 (1789).

Pelargonium scutatum Sweet, Geran. 1: 95, t. 95 (1821); DC., Prodr. 1: 666 (1824); G. Don, Gen. Syst. 1: 738 (1831); Steud., Nom. Bot. ed. 2, 2: 289 (1841). Iconotype: Sweet, Geran. 1: t. 95!.

Dibrachya scutata (Sweet) Eckl. & Zeyh., Enum. 1: 74 (1835).

Pelargonium peltatum (L.) L'Hérit. var. *scutatum* (Sweet) Harv. in Fl. Cap. 1: 293 (1860); Knuth in Pflanzenr. 4, 129: 423 (1912). Type: as for *P. scutatum* Sweet.

P. peltatum (L.) L'Hérit. var. *zonatum* DC., Prodr. 1: 666 (1824); G. Don, Gen. Syst. 1: 738 (1831); ex descr. Type: not designated.

Dibrachya clypeata Eckl. & Zeyh., Enum. 1: 75 (1835). Type: Cape, Sondagsrivier, Uitenhage, Ecklon & Zeyher 580 (S, lecto.!, SAM!).

Pelargonium clypeata (Eckl. & Zeyh.) Steud., Nom. Bot. ed. 2, 2: 284 (1841).

P. peltatum (L.) L'Hérit. var. *clypeatum* (Eckl. & Zeyh.) Harv. in Fl. Cap. 1: 293 (1860); Knuth in Pflanzenr. 4, 129: 423 (1912).

P. peltatum (L.) L'Hérit. var. *glabrum* Harv. in Fl. Cap. 1: 293 (1860); Knuth in Pflanzenr. 4, 129: 423 (1912). Syntypes: Cape, Kogmanskloof, Ecklon & Zeyher 578 (S, lecto.!), Hessaquaskloof, Zeyher 2075 (S!).

DESCRIPTION (Fig. 2)

Perennial scrambler, attaining a height of more than 2 m. *Stems* slender, smooth, 3–10 mm in diameter. *Leaves* alternate, sometimes apparently opposite, glabrous to villous, greyish-green to green; lamina shallowly to deeply 5-palmatilobate, cordiform to circular in outline, peltate to pala-



FIG. 2.
Pelargonium peltatum from Dinkie Waterfall near Bourke's Luck, eastern Transvaal (Buitendag 1095). (Illustration by E. Ward-Hilhorst).

ceous, palmately veined, variably succulent, sometimes zoned, apex acute to obtuse, margin entire, (9–)30(–67) $\times$ (18–)50(–87) mm; petiole 5–55 mm long; stipules broadly ovate to deltoid, ca. 4 $\times$ 7 mm. *Inflorescence*: peduncles (40–)65(–85) mm long, glabrescent to pilose; involucre bracts ovate to lanceolate, pilose, ca. 3 $\times$ 2 mm; pseudo-umbels with 2–10 flowers each. *Pedicel* 1.8–5 mm long, pilose. *Hypanthium* (20–)30(–42) mm long, pilose. *Sepals* 5, lanceolate, pilose abaxially, light green to purplish, (7.5–)11(–14) mm long. *Petals* 5, mauve or pinkish-mauve to pale pink or even whitish; posterior two spatulate, sometimes with purple markings, reflexed at ca. 90°, (15–)21(–27) $\times$ (6–)9(–12) mm; anterior three spatulate, slightly reflexed, (13.5–)17(–21) $\times$ (3.5–)6(–7.5) mm. *Stamens* 10, 7(–5) fertile, bases of filaments fused to form a column of ca. 2 mm long, fertile stamens of different lengths but two very short, 2–11 mm long, anthers ca. 2 mm long, purple. *Ovary* ca. 4 mm long, lanate; style ca. 5 mm long, glabrescent to pilose; stigmas 5, ca. 3 mm long. *Mericarps*: base ca. 7 mm long, hirtellous, tail ca. 30 mm long; seeds ellipsoid, ca. 5 $\times$ 2 mm, testa glabrous, brown.

DIAGNOSTIC FEATURES

Perennial scrambler. Lamina shallowly to deeply 5-palmatilobate, cordiform to circular in outline, peltate to palaceous, variably succulent, sometimes zoned. Pseudo-umbels with 2–10 flowers each. Petals 5, mauve or pinkish-mauve to pale pink or even whitish.

GEOGRAPHICAL DISTRIBUTION AND HABITAT

Occurs in the Cape Province, Transkei, Natal and Transvaal, from Wellington in the south west to the Blyderivier in the north, in a strip more or less parallel to the southern and eastern coast (Fig. 3). It is especially common in the Sundays River Scrub, Fish River Scrub, Addo Bush and the southern variation of Valley Bushveld (Acocks, 1975).

Its main flowering period is from October to January but occasional flowers are found almost throughout the year. *Pelargonium peltatum*, which is the ancestor of many garden hybrids of the "ivy-leaved pelargoniums" of today, was introduced into Holland by Wilhelm Adriaen (Willem Adriaan) van der Stel in 1700 and into Britain by Masson in 1774 (Van der Walt, 1977).

DISCUSSION

One of the main problems in this investigation was to decide whether *P. lateripes* should be upheld or not. L'Héritier described *P. lateripes* as having cordate (meaning palaceous) leaves, and *P. peltatum* as having peltate leaves. This criterion was used in subsequent keys as the main distinction

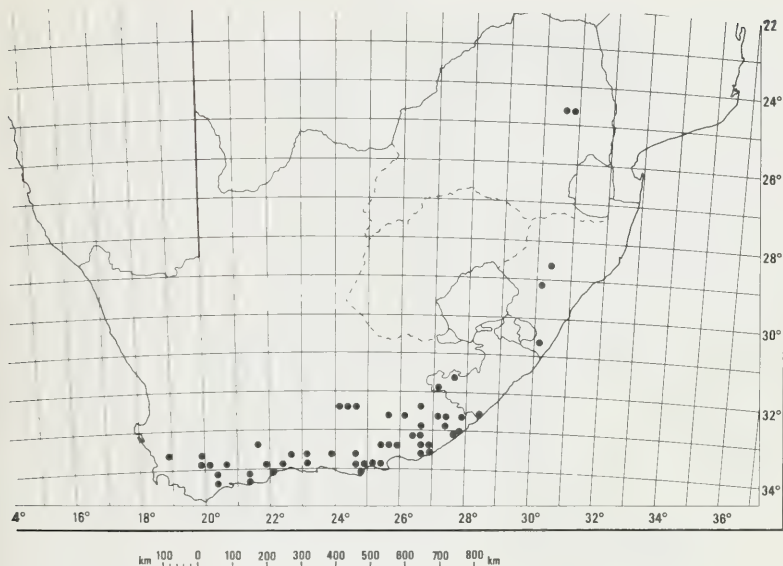


FIG. 3.
Distribution map of *Pelargonium peltatum*.

between these two species. Type material of *P. lateripes* could not be traced, and the origin of the material used for the iconotype plate (Fig. 4) is not known either. In a lengthy description of *Geranium lateripes* (sic) in an unpublished manuscript in the archives of the Conservatory and Botanic Garden Genève, L'Héritier states that this seems to be a hybrid of *Geranium peltatum* (sic).

Examination of live material of *Pelargonium peltatum* from a wide range of localities, grown under uniform conditions, showed that specimens from the western part of the distribution range have typical peltate leaves whereas those with a more eastern and northern distribution have palaceous leaves (Fig. 5). These palaceous forms could easily fit the description of *P. lateripes* but their resemblance to the iconotype plate is not obvious. The possibility is therefore not excluded that L'Héritier used the specific epithet *lateripes* for a hybrid of *P. peltatum* without realising the existence of a palaceous form in nature. Whatever the case may be, both these leaf forms sometimes occur on the same plant. Numerous intermediates also exist, indicating that the two extremes cannot be recognised as separate taxa. This is supported



FIG. 4.
Iconotype plate of *Pelargonium lateripes*. [L'Héritier: *Geranologia*: t. 24 (1792)].

by anatomical studies of leaves which revealed no significant differences. In the light of this and the uncertainty that exists in connection with the type material, it is suggested that the name *P. lateripes* should be excluded and that all those plants with palaceous leaves should be regarded as geographical forms of *P. peltatum*.

Taxa based on zonation as well as on degree of hairiness of the leaves are placed here into synonymy under *P. peltatum*, as it is apparent that these attributes are so variable that it is not worthwhile upholding these taxa. The very hairy specimen from Chalumna Mouth (Vorster 2254) owes this attribute to the small epidermal cells rather than to a high trichome index.

On the whole the leaves are of a succulent nature although the specimens collected at the Kei Mouth (Olivier 2404) appear to be more mesophytic. The shape of the lamina varies from a distinctly five-lobed to an almost unlobed condition (Fig. 5).

From the above it is clear that the marked variation in leaf characteristics which gave rise to this considerable number of taxa, is of a continuous nature. This leads to the conclusion that only one species is involved, of which the correct name is *P. peltatum* (L.) L'Hérit.

EXCLUDED NAMES

Geranium hederinum Andr., Geran. 1: t. 38 (1805). Iconotype: Andr. l.c.!. Garden hybrid.

G. hederinum var. *flore albo* Andr., Geran. 1: t. 40 (1805). Iconotype: Andr. l.c.!. Garden hybrid.

G. hederinum var. *variegatum* Andr., Geran. 1: t. 39 (1805). Iconotype: Andr. l.c.!. Garden hybrid.

G. hederinum var. *zonales* Andr., Geran. 2: t. 88 (1806). Iconotype: Andr. l.c.!. Garden hybrid.

Pelargonium bachmannii Knuth in Pflanzenr. 4, 129: 423 (1912). Type: Cape, Pondoland, *Bachmann 1689*. The original herbarium of Bachmann was destroyed and no duplicate of that number could be traced. Knuth (1912) separated it from *P. peltatum* on the basis of leaf shape. He mentioned that the specimen on which the name is based had no flowers, but that it was closely related to *P. peltatum*. The type specimen *Bachmann 1689* is however also quoted by Knuth (l.c.) under *P. peltatum* var. *clypeatum*.

P. glabrum Hoffmg., Verz. Pfl.: 90 (1824). The possibility of this being the basionym for *P. peltatum* var. *glabrum* was considered. It however appears to be a nomen nudum and is therefore excluded.

P. hederæfolium Salisb., Prodr.: 315 (1796). Superfluous name for *P. lateripes*.

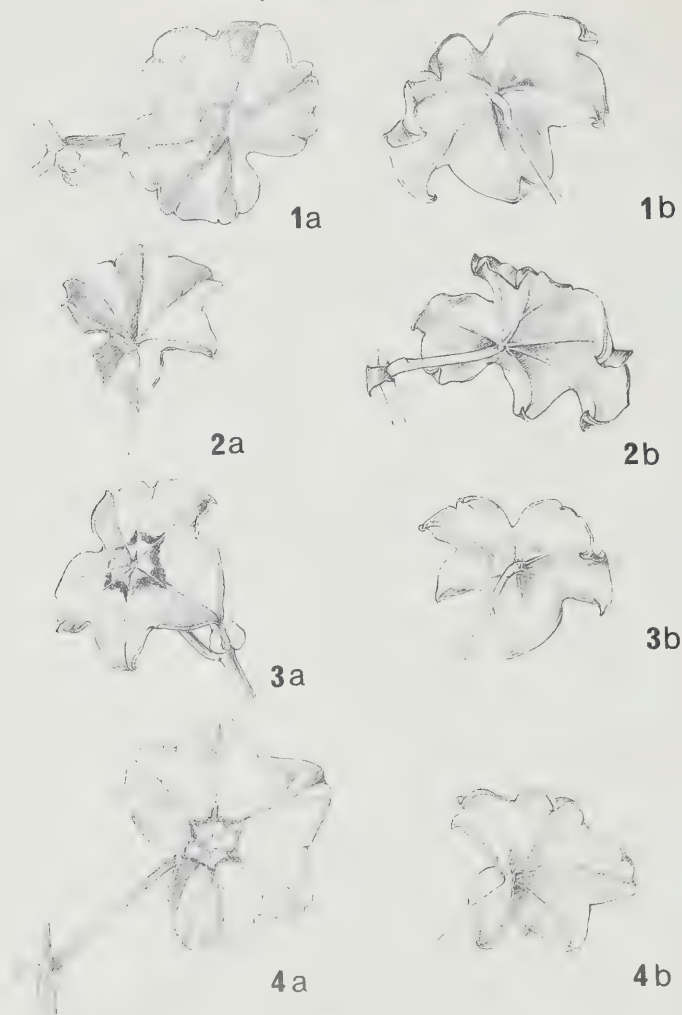


FIG. 5.

Pelargonium peltatum: variation in leaf shape, attachment of petiole and zonation. (Illustrations by E. Ward-Hilhorst).

1 (a & b): Peltate, glabrous, unzoned (Van der Walt 865, near Humansdorp).

2 (a & b): Peltate, glabrous, zoned (Van der Walt 697, Ecce Pass).

3 (a & b): Peltate, glabrous, zoned (Moffett 1027, farm Hounslow between Grahamstown and Fort Brown).

4 (a & b): Peltate, villous, zoned (Fischer 89, King William's Town).



5a



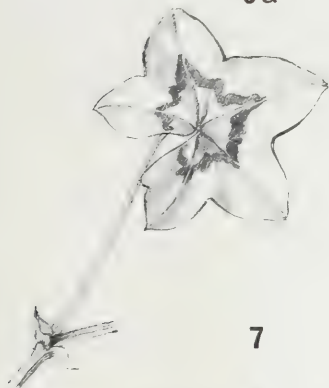
5b



6a



6b



7



8



9a



9b

- 5 (a & b): Peltate, villous, unzoned (Ward 186, Gonubie River Mouth).
 6 (a & b): Peltate, villous, unzoned (Vorster 2254, Chalumna River Mouth).
 7: Palaceous, glabrous, zoned (Olivier 3026, Gilbert Eyles Dam).
 8: Palaceous, glabrous, unzoned (Van der Walt & Vorster 1339, Kaspersnek).
 9: Palaceous, glabrous, zoned (Schonken 105, Dinkie Waterfall).

P. lateripedatum St. Lag. in Ann. Soc. Bot. Lyon 7: 131 (1880). Superfluous name for *P. lateripes*.

P. lateripes L'Hérit. in Ait., Hort. Kew. ed. 1, 2: 428 (1789); Geran.: t. 24 (1792). Iconotype: L'Hérit. l.c.!. Excluded for reasons given under heading DISCUSSION.

P. lateripes var. *albomarginatum* DC., Prodr. 1: 666 (1824). Type: not designated.

P. lateripes var. *roseum* Sweet, Hort. Brit.: 83 (1826). Type: not designated. Garden hybrid.

P. lateripes var. *viridifolium* Sweet l.c. Type: not designated. Garden hybrid.

P. lateripes var. *walneri* DC., Prodr. 1: 666 (1824). Type: sine loc. et leg. in Herb. DC. (G, holo.!).

P. lateripes var. *zonation* Sweet l.c. Type: not designated. Garden hybrid.

P. peltatum (L.) L'Hérit. var. *superbum* Andr., Geran. 2: t. 107 (1806). Iconotype: Andr. l.c.!. Garden hybrid.

P. peltatum var. *variegatum* Andr., Geran. 1: t. 45 (1805). Iconotype: Andr. l.c.!. Garden hybrid.

P. pinquifolium Sweet, Geran. 1: 52 (1821). Iconotype: Sweet l.c.!. Garden hybrid.

P. saxifragoides N.E. Br. in Gdnrs' Chron. 8: 154 (1890). Type: sine loc., N.E. Brown s.n. (K, holo.!). The original description was based on a garden plant of which the origin is unknown.

SPECIMENS EXAMINED

TRANSVAAL—2430 (Pilgrim's Rest): Kaspersnek (-DA), Van der Walt & Vorster 1339 (STEU); Dinkie Waterfall (-DB), Buitendag 1095 (PRE), Schonken 105 (STEU).

NATAL—2830 (Dundee): 19.2 km from Greyton on Tugela Ferry Road, Umvoti (-CB), Edwards 2527 (NU).

—2930 (Pietermaritzburg): Mooirivier (-AA), Wood 5316 (NH).

—3030 (Port Shepstone): Gilbert Eyles Dam (-CA), Olivier 3026 (PEU).

CAPE—3127 (Lady Frere): Glen Gray Falls (-CC), Galpin 2502 (GRA); Near Cala (-DA), Royffe 179 (GRA).

—3224 (Graaff-Reinet): Mountains W of Graaff-Reinet, kloof leading out of Van Reyneveld's Pass (-AC), Anon. 538 (BOL); Valley of Desolation (-AD), Liebenberg 850 (PRE); Graaff-Reinet (-BC), Thode A553 (PRE).

—3225 (Somerset East): Bosberg (-DA), Olivier 1776 (PEU).

—3226 (Fort Beaufort): Katberg Pass (-BC), Olivier 2406 (PEU); Bedford (-CA), Nicol 66 (Z); SE Koonap (-DC), Blackbeard s.n. (BOL).

—3227 (Stutterheim): Hogsback (-CA), Olivier 2405 (PEU); Ripplemead, Kabousie (-CB), Hutton 503 (NBG); King William's Town (-CD), Fischer 89 (STEU); Komgha (-DB), Flanagan 1161 (GRA, Z).

—3228 (Butterworth): Keimond (-CB), Olivier 2404 (PEU), Van der Merwe s.n. (sub 1240 STEU); Gonubie River Mouth (-CC), Ward 186 (STEU).

- 3318 (Cape Town): Wellington (-DB), *Thompson* 33 (PRE).
- 3319 (Worcester): Koo Mountains (-DB), *Compton* 3924 (BOL); Robertson (-DD), *Galpin* 10338 (PRE).
- 3320 (Montagu): Kogmanskloof (-CC), *D. Boucher* 98 (STEU), *Esterhuysen* 23807 (BOL, PRE), *Leipoldt s.n.* (BOL); Bonnievale, *Marloth* 11829 (PRE); Ashton (-DC), *Marloth* 3266 (STE).
- 3321 (Ladismith): Huisrivier Pass (-BC), *Barker* 20599 (BOL), *Gillett* 4530 (PRE), *Ihlenfeldt* 1637 (PRE); Slangrivier, Swellendam (-DD), *Walgate* 842 (NBG, PRE).
- 3322 (Oudtshoorn): Farm Waenskloof (-CD), *Moffett* 1068 (STEU); George, *Schimper s.n.* (Z); Doornkraal, De Rust (-DA), *Dahlstrand* 2475 (PRE).
- 3323 (Willowmore): Uniondale Hot Springs (-CA), *Esterhuysen* 6282 (BOL, PRE); Road from Klein River to Brandhoek (-CC), *Fourcade* 5490 (STE); Kouga Mountains, NE of Smutsberg, Vleikloof (-DB), *Thompson* 2003 (PRE, STE).
- 3324 (Steytlerville): 27.2 km from Patensie, 1.9 km W of Heronscliff (-DA), *Thompson* 931 (PRE, STE); 8.3 km from Andrieskraal to Humansdorp (-DC), *Thompson* 936 (PRE, STE); 10.7 km from Hankey to Humansdorp Pass (-DD), *Thompson* 914 (PRE, STE); Hankey to Patensie (-DD), *Thompson* 919 (PRE, STE).
- 3325 (Port Elizabeth): Kirkwood, Uitenhage dist. (-AD), *Taylor* 4145 (NBG, STE); Zuurberg Pass (-BC), *Barker* 4923 (NBG); Addo Park (-BD), *Van der Walt* 873 (STEU), *Brynard* 203 (PRE), *Liebenberg* 6275 (PRE), *Olivier* 550 (GRA); Van Stadens Pass (-CC), *Olivier* 1906 (PEU); Uitenhage (-CD), *Ecklon & Zeyher* 181 (PRE); Springs Reserve, Uitenhage, *Olivier* 1990 (PEU); Markham Industrial Area (-DC), *Dahlstrand* 1770 (PRE, STE); Berg River, Thornhill, *Dix* 122 (BOL); Baakens River, Fern Glen, *Olivier* 1224 (NBG, PEU, PRE), *Van der Walt* 567 (STEU); Blue Water Bay, *Olivier* 1696 (PEU); Redhouse, *Paterson* 230 (BOL).
- 3326 (Grahamstown): Carlisle Bridge (-AB), *Taylor* 4284 (NBG); Farm Hounsflow on the way to Fort Brown (-BA), *Moffett* 1027 (STEU); Grahamstown (-BC), *Bayliss* 123 (PRE), *Dyer* 2091 (PRE); 18.9 km from Grahamstown on Port Elizabeth road, *Brink* 476 (GRA); 32 km S of Grahamstown, *Heginbotham* 200 (NBG); 12 km from Grahamstown on Port Elizabeth road, *Olivier* 1911 (PEU); Between Grahams-town and Fort Beaufort, *Van der Walt* 697 (STEU), *Werdermann & Oberdieck* 1046 (PRE); Fraser's Camp (-BD), *Maguire* 635 (NBG); Kenton-on-Sea (-DA), *Bayliss* 1886 (NBG, Z); Kasouga Mouth, *Britten* 2326 (PRE); Bathurst, Southwell, *Schonland* 3319 (GRA); Boesmansriviermond, *Van der Walt* 695 (STEU); Port Alfred (-DB), *Burt Davy* 7899 (E), *Compton* 21085 (NBG), *Moffett* 1025 (STEU); Farm Peninsula, *Fletcher* 81 (GRA); Bathurst, *Sidey* 3160 (PRE).
- 3327 (Peddie): East London (-BA), *Rattray* 289 (GRA); Chalumna River Mouth, *Vorster* 2254 (PRE); Buffalo Pass, East London (-BB), *Compton* 17784 (NBG).
- 3420 (Bredasdorp): Swellendam (-AB), *Marloth* 8630 (PRE); E of Bushman's River, Swellendam, *Martin* 666 (NBG); Wydgelegen (-AD), *Compton* 19509 (NBG).
- 3421 (Riversdale): Kafferkuils River, Riversdale (-AB), *Muir* 419 (PRE), *Schlechter* 1966 (W, Z); Stilbaai (-AD), *Johnson* 105 (NBG), *Nel s.n.* (STE); Muis-kraal, Gouritz River bridge (-BA), *Van der Walt* 834 (STEU).
- 3422 (Mossel Bay): Mossel Bay (-AA), *Duthie s.n.* (STE), *Guthrie* 4285 (NBG), *Marloth* 2454 (PRE), *Penther* 2196 (W), *Rogers* 23284 (PRE), *Rogers* 27160 (Z); Grootbrakrivier, *Galpin* 3825 (PRE); Kleinbrakrivier, *Taylor* 6979 (PRE), *Van der Walt* 670 (STEU); 7.5 km W of Grootbrakrivier bridge, *Taylor* 8320 (PRE, STE); Between Grootbrak- and Kleinbrakrivier, *Taylor* 7814a (PRE); Ruigtevlei (-BB), *Fourcade* 1555 (BOL, GRA, PRE, STE).
- 3424 (Humansdorp): Jeffrey's Bay (-BB), *Duthie s.n.* (STE), *Hutchinson* 1447 (BOL, PRE); Seekoei River, *Montgomery* 27 (STE); 20 km from Humansdorp, *Van der Walt* 865 (STEU).

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